

What is claimed is:

- [c1]** 1. A method of identifying MPEG picture coding types of pictures in a digital recording system, comprising:
- receiving a plurality of packets having audiovisual and information data therein;
  - parsing a payload portion of a particular one of said plurality of received packets to identify the picture coding type in the payload portion.
- [c2]** 2. The method of claim 1, wherein said parsing is performed on a packet only if a first bit of a header designator of that packet toggles.
- [c3]** 3. The method of claim 1, wherein a picture is a frame or a field.
- [c4]** 4. The method of claim 1, wherein the detected picture coding type is compared to stored codes representing intra-coded (I), predictive-coded (P), and bi-directionally predictive-coded (B) picture types.
- [c5]** 5. The method of claim 1, wherein said steps of receiving, parsing and identifying are performed during a recording of an incoming broadcast or event.
- [c6]** 6. The method of claim 5, further comprising:
- indexing the identified picture coding types, the indexed I-pictures representing flags so as to be located and decompressed in a subsequent playback of, or trick mode operation performed on, the recorded broadcast or event; and
  - forwarding said indexed picture types together with the processed packet payloads to a central processor for eventual storage in the recording system.

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**[c7]** 7. The method of claim 2, wherein the length of said packets is 130 bytes, said parsing being performed only at the 43<sup>rd</sup> to 45<sup>th</sup> bytes of the particular packet with the toggling header designator.

**[c8]** 8. The method of claim 1, wherein the presence of an MPEG picture start code in the payload portion is indicated by toggling of a bit in a header designator portion of said particular one received packet.

**[c9]** 9. A transport processor for identifying MPEG picture coding types of pictures in a digital video recording (DVR) system, comprising:

means for receiving a plurality of packets having audiovisual and information data therein;

means for parsing a payload portion of a particular one of said plurality of received packets to identify the picture coding type in the payload portion.

**[c10]** 10. The transport processor of claim 9, wherein said means for receiving, means for parsing and means for identifying are embodied as any of application specific integrated circuits (ASIC) with on-chip instruction cache and data cache memory, and integrated system peripherals.

**[c11]** 11. The transport processor of claim 10, wherein said integrated system peripherals represent interrupt, timer, and memory controllers on-chip, including ROM, SDRAM, DMA controllers, packet processors, a crypto-logic unit, a PCI compliant PC port, and parallel inputs and outputs.

**[c12]** 12. The transport processor of claim 9, wherein a picture is a frame or a field.

**[c13]** 13. The transport processor of claim 9, wherein the transport processor compares the detected picture coding type to stored codes representing intra-coded (I), predictive-coded (P), and bi-

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directionally predictive-coded (B) picture types, said stored codes provided in an SDRAM operatively connected to the transport processor.

**[c14]** 14. The transport processor of claim 9, wherein said transport processor performs said steps of receiving, parsing and identifying as the DVR system records an incoming broadcast or event.

**[c15]** 15. The transport processor of claim 9, wherein the transport processor further indexes the identified picture coding types and stores them in an SDRAM, the indexed I-pictures representing flags so as to be located and decompressed in a subsequent playback of, or trick mode operation performed on, the recorded broadcast or event; the transport processor further including:

means for forwarding said stored indexed picture types together with the processed packet payloads to a central processor for eventual storage in a mass storage device of the DVR system.

**[c16]** 16. The transport processor of claim 9, wherein length of said packets is 130 bytes, said transport processor parsing a packet only at the 43rd to 45th bytes of the particular packet having the toggling header designator.

**[c17]** 17. The transport processor of claim 9, wherein the presence of an MPEG picture start code in the payload portion is indicated by toggling of a bit in a header designator portion of said particular one received packet.

**[c18]** 18. A set top box (STB) for identifying MPEG picture coding types of a received broadcast or event, comprising:

a transport processor operatively connected to a bus and to one or more input ports for receiving a plurality of packets of audiovisual and information data representing said broadcast or event from said input port;

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a host processor operatively connected to said bus and interacting with the transport processor to process the received packets; and

a recording device for digitally recording said received packets for later playback,

wherein said transport processor parses a payload portion of a particular one of said plurality of received packets to identify the picture coding type in the payload portion.

**[c19]** 19. The STB of claim 18, wherein said transport processor parses a packet only if a first bit of a header designator of that packet toggles.

**[c20]** 20. The STB of claim 18, wherein a picture is a frame or a field.

**[c21]** 21. The STB of claim 18, wherein the detected picture coding type is compared to stored codes representing intra-coded (I), predictive-coded (P), and bi-directionally predictive-coded (B) picture types, said codes stored in an SDRAM operatively connected to the transport processor.

**[c22]** 22. The STB of claim 18, wherein the parsing and identifying of picture types is performed as the STB records the incoming broadcast or event.

**[c23]** 23. The STB of claim 21,  
wherein the transport processor indexes the identified picture coding types, the indexed I-pictures representing flags so as to be located and decompressed in a subsequent playback of, or trick mode operation performed on, the recorded broadcast or event, and  
wherein the indexed picture types together with the processed packet payloads are forwarded to the host processor that identified the I-pictures to be decompressed and then stores the processed packet payloads in the mass storage device of the STB.

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**[c24]** 24. The STB of claim 23, wherein the mass storage device is any of a magnetic storage device, an optical storage device, or a hard disk drive.

**[c25]** 25. The STB of claim 18, wherein length of said packets is 130 bytes, said transport processor parsing a packet only at the 43<sup>rd</sup> to 45<sup>th</sup> bytes of the particular packet having the toggling header designator.

**[c26]** 26. The STB of claim 18, wherein the presence of an MPEG picture start code in the payload portion is indicated by the toggling of a bit in a header designator portion of said particular one received packet.

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